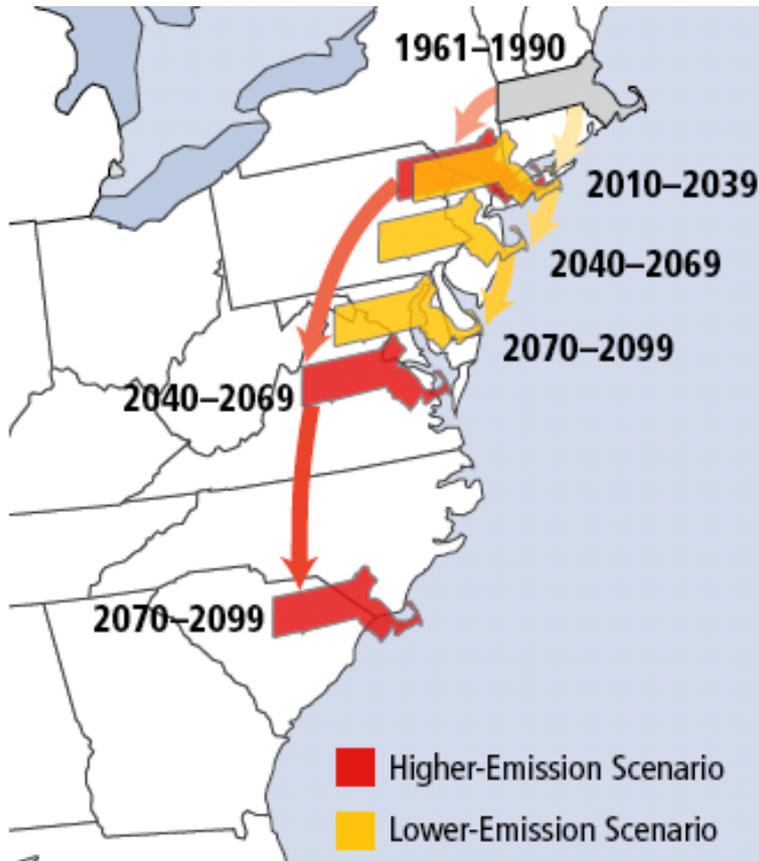

310 CMR 7.72:
*Reducing Sulfur Hexafluoride Emissions
from Gas-Insulated Switchgear*

Long Beach, CA

Wednesday, May 7, 2014

Climate Change: Massachusetts Impacts



- Rising Sea Levels → Coastal Erosion
- Warmer Water → Degraded Habitats
- Hotter Summers → Health Impacts
More Droughts
- Warmer Winters → Less Maple Syrup
Less Snow/ Skiing

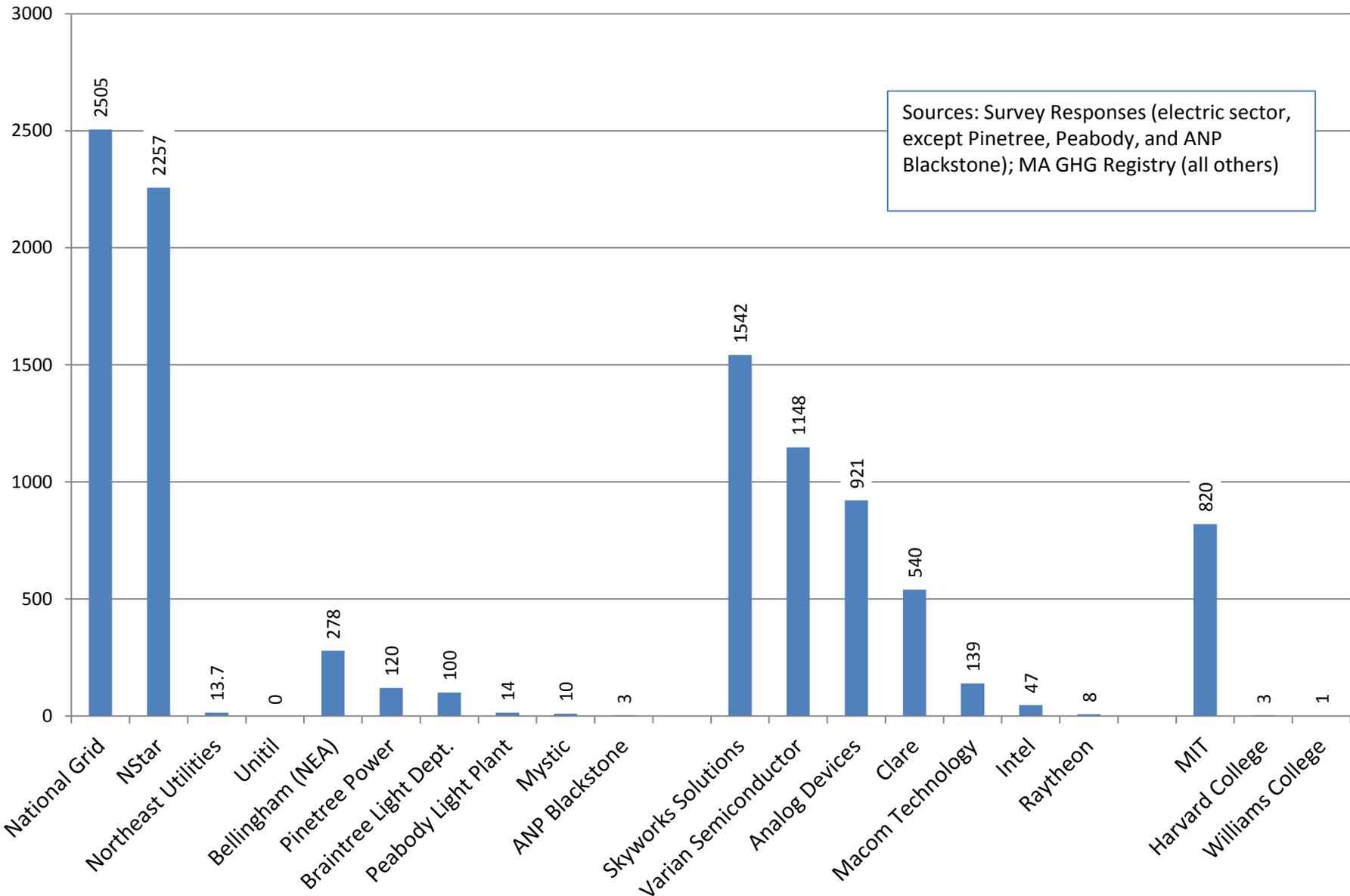
Source: UCS, 2007



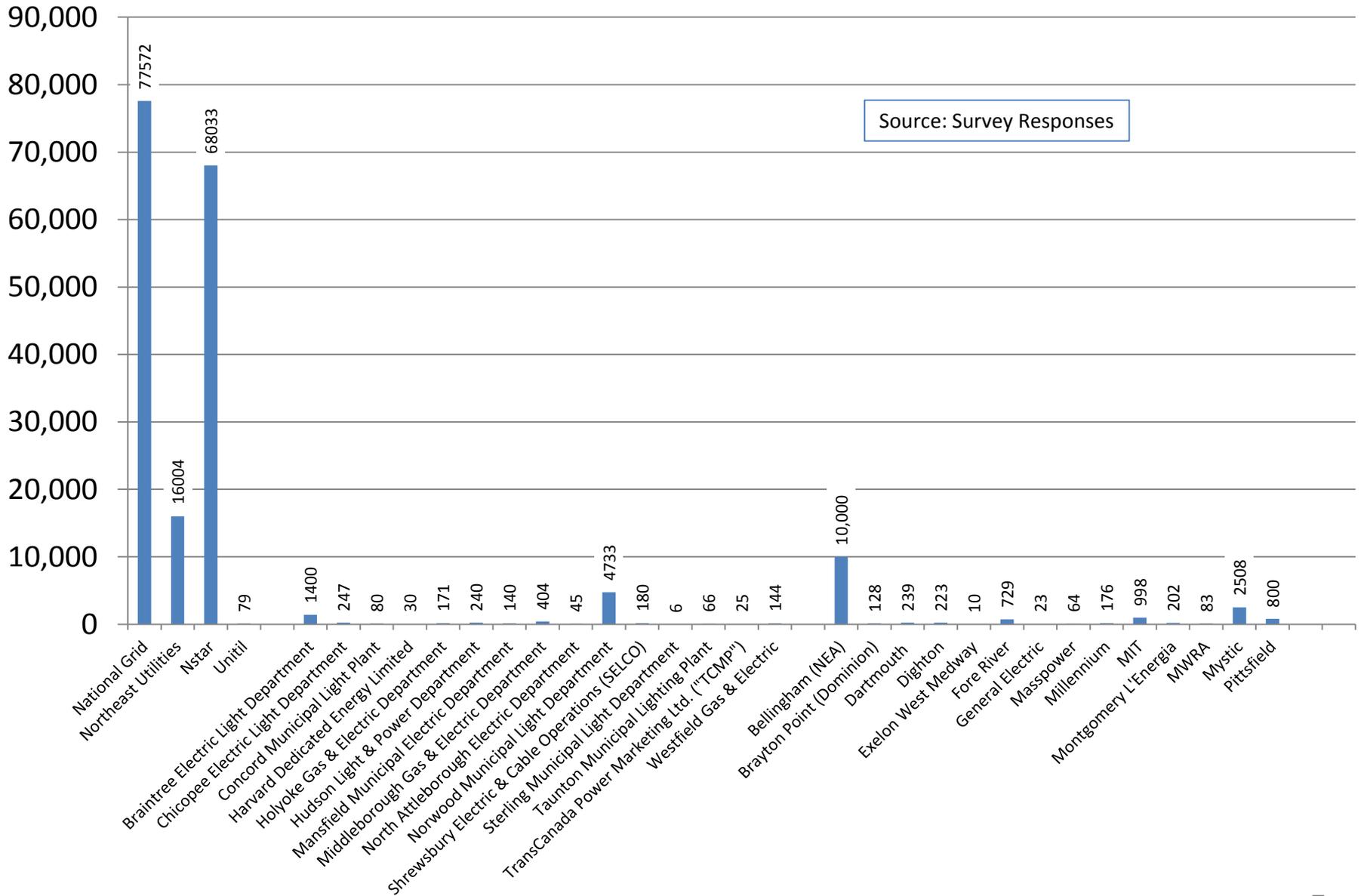
Background

- *Massachusetts Clean Energy and Climate Plan for 2020* contains a portfolio of policies, including “*Reducing SF₆ Emissions from Gas-Insulated Switchgear*”
- *Minimize emissions of sulfur hexafluoride (SF₆) from leakage of gas insulated switchgear (GIS) used in electricity transmission and distribution systems by setting limits on leakage rates (declining to 1 percent leakage allowed in 2020) and implementing best management practices for the recovery and handling of SF₆*

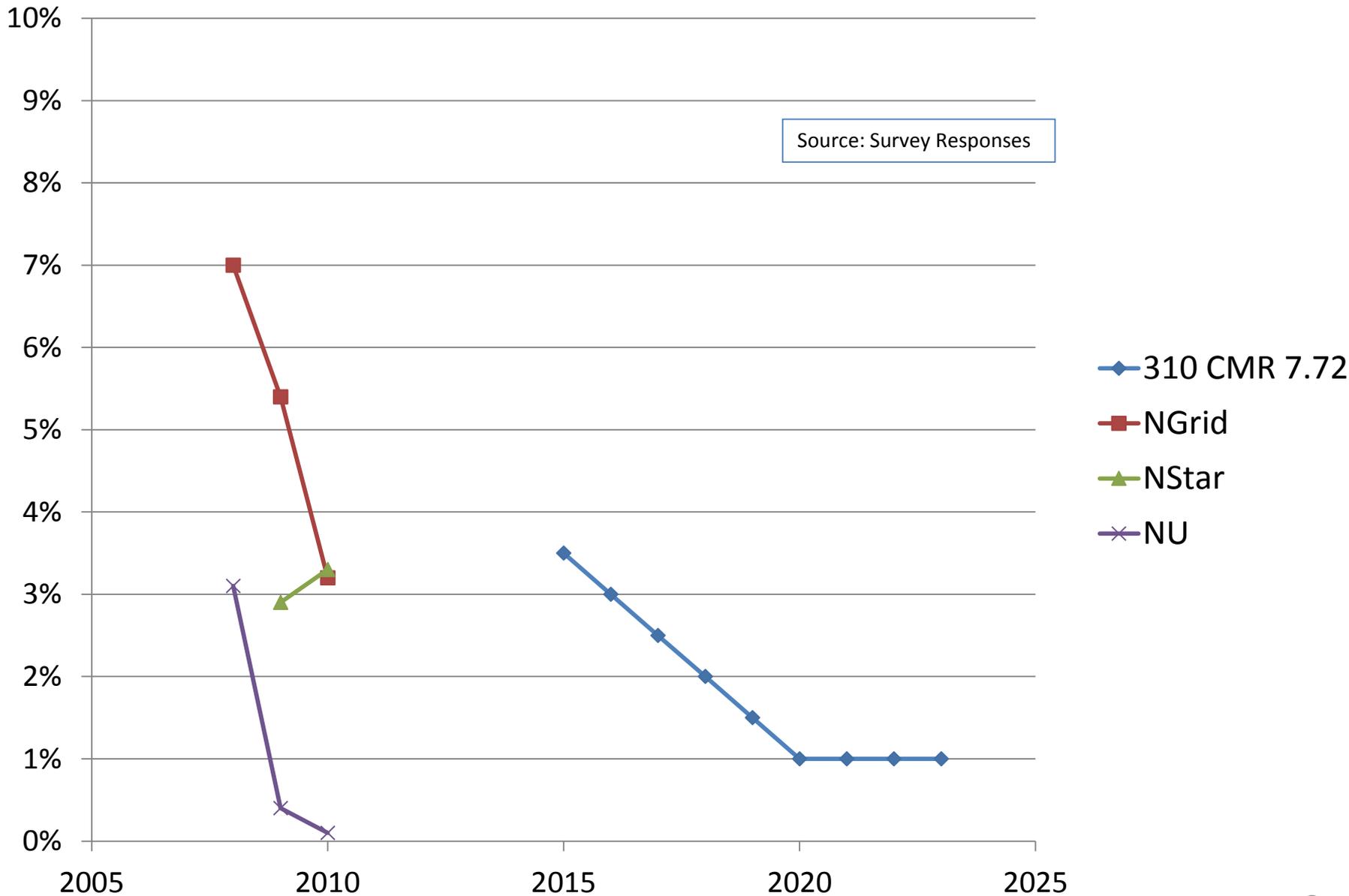
Known MA SF₆ Emissions from GIS and Other Sources, 2010, lbs



Known SF₆ Inventories in GIS, 2010, lbs



SF₆ Leakage Rates for MA Utilities



Regulation: Large Utilities

- *Each federal reporting GIS owner shall ensure that the maximum annual SF₆ emission rate for all of its active GIS equipment . . . shall not exceed the following:*

| Maximum Annual SF ₆ Emission Rate | |
|--|---|
| Calendar Year | Maximum Allowable SF ₆ Emission Rate |
| 2015 | 3.5% |
| 2016 | 3.0% |
| 2017 | 2.5% |
| 2018 | 2.0% |
| 2019 | 1.5% |
| 2020, and each calendar year thereafter | 1.0% |

- Calculations consistent with 40 CFR Part 98
- Emergency event exemption

Regulation: All GIS Owners

- *Any newly manufactured [SF₆ – containing] GIS that is placed under the ownership, lease, operation, or control of any GIS owner [in Massachusetts] . . . must be represented by the manufacturer to have a 1.0% maximum annual leak rate.*
 - Follow recommended maintenance procedures
 - Track SF₆ emissions using mass balance (may average across years and GIS)
 - Report to MassDEP if 1.0 % rate is exceeded (including actions to reduce emissions)
- *Upon removal of any GIS containing SF₆ . . . the GIS owner shall provide for the secure storage, re-use, recycling, or destruction of the SF₆.*

Regulation: Timeline

- April 25, 2014 (promulgation date): SF₆ disposal requirements when GIS removed from service.
- January 1, 2015: Requirement for new GIS to meet 1.0% annual average emission rate.
 - And other applicable requirements for new GIS
- April 15, 2016: First reporting deadline for large utilities to demonstrate compliance with rate (for 2015 emissions)
- 2020: 1.0% rate applies for large utilities

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